Permit to Construct Application for a Paint Booth

Weiser, Idaho

Prepared for:

Mirage Enterprises, Inc.
2212 Industrial Road
Nampa, Idaho 83687

May 2007

Project No. 10277.002

Geomatrix

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2212 Industrial Road
Nampa, Idaho 83687

Prepared by:

Geomatrix Consultants, Inc.
19203 36th Avenue West, Suite 101
Lynnwood, Washington 98036
(425) 921-4000

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Geomatrix

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PERMIT TO CONSTRUCT APPLICATION

Mirage Enterprises, Inc.
Weiser, Idaho

1.0 INTRODUCTION

Mirage Enterprises, Inc. (Mirage) operates a facility in Weiser, Idaho that manufactures a wide variety of cargo trailers for commercial and retail sale in the region. The facility currently does not include any air pollutant emission sources, and, as a result, has never applied for a permit. Mirage proposes to install a paint booth that would be used a maximum of ten hours per day.

Mirage requests that the Department of Environmental Quality (DEQ) grant a PTC for the proposed project. Mirage will not complete installation of the paint booth, nor operate it until DEQ issues the permit. Appendix A contains DEQ's standard PTC Forms (CS, GI, EU3, EI, MI, and FRA).

2.0 PROJECT DESCRIPTION

2.1 EXISTING FACILITY

Mirage's Weiser facility currently manufactures cargo trailers, and Mirage wants to add the capability to paint trailers.

2.2 PROPOSED PROJECT

Mirage proposes to install and operate two paint booths that would be assembled to form a single, large paint booth with two ventilation systems. The two paint booths were previously installed and operated at Mirage's Nampa facility. Permits for the paint booths (PTC No. P-050001 and PTC No. P-060014) were issued by DEQ on September 22, 2005 and August 4, 2006. A sketch of the site plan showing the relative location of the paint booth, the vent stacks, and the property boundary is presented in Figure 2-1.

After installation is complete, the booth would be operated ten hours per day. The cargo trailers constructed at the facility will be painted with Gavlon 411-FC Gloss Black (hereafter referred to as Gavlon), and usage is expected to be approximately 150 gallons per week. The MSDS sheets for the proposed paint are included in Appendix B.

3.0 AIR POLLUTANT EMISSIONS

Mirage's proposed paint booth project will install two paint booths, that would be operated as a single paint booth with two ventilation systems. As discussed in the previous section, the booth will be used to coat cargo trailers with paint (Gavlon), and be used a maximum of ten hours per day.

The proposed project is expected to result in regulated pollutant emission increases, although Mirage will minimize these emissions through design and operation. The spray equipment that will be used in the paint booth is designed to transfer 75 percent of the paint used to the intended surface, and the filter media used in the booth exhaust system is guaranteed to remove at least 94 percent of the paint overspray.

The paint is made up of several compounds including solids and volatile organics. The solids content of the paint, which was assumed to be equal to the non-volatile portion of the paint, was assumed to be emitted as PM_{10}. The volatile portion of the paint, as identified by the MSDS, was assumed to be the total volatile organic compound (VOC – a surrogate for ozone, which is not directly emitted, but formed secondarily in the atmosphere) emissions. It was assumed that 100 percent of the paint VOC content would exhaust through the paint booth vents, and that the PM_{10} emissions would be reduced by the spray equipment efficiency and control imparted by the filters in the booth exhaust systems. Additionally, several of the compounds listed in the paint MSDS are identified as toxic air pollutants (TAPs) in Section 585. None of the TAPs in the proposed paints are among the expected carcinogenic compounds listed in Section 586.

To calculate the maximum potential to emit (PTE) for the proposed paint booth, a maximum hourly paint application rate of 4.0 gallons per hour (gal/hr) was assumed for the Gavlon (equivalent to a total of approximately 280 gallons per week [gal/wk] based on 10 hours of operation 7 days per week). The maximum annual PTE emission rate in tons per year (TPY) was calculated assuming that the paint booth would be operated every day for the entire year (10 hours × 365 days per year = 3,650 hours). Table 3-1 summarizes the maximum PTE for the proposed paint booth, and Appendix C presents the detailed PTE calculations.

Table 3-1 indicates that maximum PTE emissions of VOCs and three TAPs exceed the Below Regulatory Concern (BRC) levels established by IDAPA 58.01.01.221.01. Furthermore, though not explicitly shown in Table 3-1, the hourly PM_{10} emission rate exceeds the modeling threshold established by DEQ in the Modeling Guideline (0.20 lb/hr). Two of the TAPs listed

in Table 3-1 (methyl n-amyl ketone and crystalline quartz) would exceed the applicable screening Emission Levels (ELs) provided in IDAPA 58.01.01.585.

As a result of criteria pollutant and TAP maximum PTE exceeding the regulatory concern thresholds, PM_{10} emissions exceeding the DEQ modeling thresholds, and two TAPs exceeding the SEL, a modeling analysis was developed to predict ambient concentration increases associated with the project. Additional detail regarding the dispersion modeling analysis is provided in Section 5.

4.0 POTENTIALLY APPLICABLE REGULATIONS

The proposed project is potentially subject to federal and state air pollution control regulations. This section discusses the applicable regulations and details why other federal and state regulations are not applicable.

4.1 FEDERAL REQUIREMENTS

4.1.1 National Emission Standards for Hazardous Air Pollutants

EPA has established National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 63 to regulate HAP emissions from industrial sources that emit more than 10 tons of a single HAP, or 25 tons of all HAP combined. However, these standards do not apply because the paint proposed for use in the booth does not contain any HAPs, does not have the potential to emit any HAPs, and therefore the facility is not a major source of HAPs.

4.1.2 New Source Performance Standards

EPA has established New Source Performance Standards (NSPS) for new, modified, or reconstructed facilities and source categories such as industrial boilers. There are no NSPS sections that would potentially apply to the proposed paint booth.

4.1.3 Prevention of Significant Deterioration

Mirage's Weiser facility is not a designated facility under 40 CFR 52.21(b), and currently emits no regulated pollutants. The facility would become a major source if the proposed project caused the PTE for any regulated pollutant to exceed 250 tons per year. Including the proposed paint booth emissions, the facility's highest annual PTE will be less than the 250 tons per year threshold. Accordingly, the proposed project will not subject the facility to PSD permitting requirements.

4.1.4 Title V Operating Permit

Title V of the federal Clean Air Act requires facilities with the potential to emit more than 100 tons of a regulated criteria pollutant, 10 tons of a single HAP, or 25 tons of all HAPs combined on an annual basis to obtain a Title V Operating Permit. The facility is currently not a regulated source, and will be a minor source following installation of the proposed paint booth, because the facility PTE will be less than all major source thresholds.

4.2 STATE REQUIREMENTS

4.2.1 Permit to Construct

Section 201 of IDAPA 58.01.01 requires an owner or operator to obtain a PTC before constructing or operating a stationary source, facility, or modification, unless the project is exempt as described in Sections 220 through 223. Although the project satisfies the general exemption criteria in Section 220, it does not, as shown in Table 3-1, qualify for either a Category I or TAP exemption as a result of having the potential to emit pollutants at rates greater than the BRC thresholds.

To obtain a PTC, the application must demonstrate that the project:

- Would comply with all applicable state and federal emission standards,
- Not cause or significantly contribute to a violation of any ambient air quality standard, and
- Would not injure or unreasonably affect human or animal life or vegetation using methods provided in Section 210.

Air quality dispersion modeling is typically used to assess whether or not a proposed project complies with standards or acceptable concentrations. The modeling developed to predict ambient concentrations attributable to the proposed paint booth project is described in Section 5.

4.2.2 Toxic Air Pollutants

Section 210 of IDAPA 58.01.01 requires that emission rates be calculated for each emitted TAP and compared to the screening ELs provided in Sections 585 and 586. New or modified sources must demonstrate using air dispersion modeling that TAP emission rate increases which exceed the applicable ELs would not exceed the applicable Acceptable Ambient Concentration (AAC) provided in Sections 585 and 586. As indicated in Section 3, two TAPs (methyl n-amyl ketone and crystalline quartz) exceeded the screening EL, and the TAP dispersion modeling analysis described in Section 5 predicted that the maximum ambient concentration increase of those TAPs are less than the applicable AACs.

4.2.3 General Requirements

Idaho has no performance or technology standards specifically for paint booths. The only state requirements directly applicable to paint booths are rules that address general air quality issues, including:

- opacity [IDAPA 58.01.01.625]
- nuisance odors [IDAPA 58.01.01.776.01]

5.0 AMBIENT AIR QUALITY ASSESSMENT

5.1 MODEL SELECTION

Based on the simplicity of the source configuration, the small number of significant structures influencing the paint booth vents, and the relatively flat (simple) local terrain, EPA's SCREEN3 model (Version 96043) was chosen for the ambient air quality analysis. EPA's Guideline on Air Quality Models (40 CFR 51, Appendix W) currently recommends use of SCREEN3 as the screening technique for stationary sources located in simple terrain. The techniques used to develop the simulation are in compliance with those required by the Idaho Department of Environmental Quality (DEQ) as described in IDAPA 58.01.01.202.02 and 58.01.01.210.03 for quantification of ambient concentrations to demonstrate compliance with criteria pollutant standards and TAP increments.

5.2 MODELING PROCEDURES

The SCREEN3 model was applied using the assumptions and parameters listed in Table 5-1. Although the paint booths will be constructed to form a single booth with two vents, all pollutant emissions were assumed to be emitted by a single vent. Due to the proximity of the vent discharge point to the paint booth structure (approximately nine feet above the roof), and the associated potential for downwash effects, SCREEN3's downwash calculation option was employed by providing the model with the maximum dimensions of the structure on which the vent is situated. The vents will exhaust horizontally through a "candy-cane" stack, where the stack is turned 90 degrees or more from vertical to keep precipitation from entering the ductwork. As a result of this stack orientation, the stack diameter and exit velocity were set to zero to eliminate any plume rise in the modeling simulation.

SCREEN3 does not use site-specific meteorological data, but rather uses a set of worst-case screening meteorological data in the simulations. SCREEN3's screening meteorological dataset consists of different combinations of wind speeds and stability classes that are designed to result in the maximum possible ground level concentrations.

Rather than developing individual simulations for each pollutant, a single simulation using a unit emission rate of 1.0 grams per second (g/s) was created. The maximum 1-hour average result of the simulation (in micrograms per cubic meter ($\mu g/m^3$) per g/s) was scaled using the individual pollutant emission rates to obtain the predicted maximum one-hour average concentrations. The persistence factors specified in Appendix A of DEQ's Air Quality Modeling Guideline were used to extrapolate these 1-hour average predicted concentrations to

the appropriate averaging period. A factor of 0.4 was used to obtain 24-hour average concentrations, and a factor of 0.08 to obtain annual average concentration for PM_{10}.

A modeling protocol outlining the methodology described in this permit application was provided to DEQ. Darrin Mehr of DEQ provided a letter indicating approval of the protocol; a copy of the letter is included in Appendix D.

5.3 MODELING ANALYSIS RESULTS

The maximum concentration was predicted to occur approximately 180 feet (55 meters) from the modeled vent. The combination of an ambient exhaust temperature and a stack exit location relatively near a structure likely to create downwash result in the simulation predicting minimal or no plume rise. It should be noted that these results are conservative because the worst-case meteorological conditions assumed by SCREEN3 may not ever occur at the facility, and the persistence factors used to convert the simulation's 1-hour average concentration to 24-hour and annual average concentrations assume continuous emissions from the source, rather than an actual operating schedule. A hardcopy of the SCREEN3 output file produced by the unit emission rate simulation is provided in Appendix E.

The predicted maximum 24-hour and annual average ambient concentrations attributable to PM_{10} emitted by the new paint booth exceed the SCLs established for PM_{10} (24-hour average – 5 $\mu g/m^3$, annual average – 1 $\mu g/m^3$). New emission sources with predicted regulated pollutant impacts that exceed the SCL are required to perform a facility-wide analysis to demonstrate that the proposed emission increase would not have the potential to cause or contribute to a violation of the national ambient air quality standards (NAAQS). The simulation results and comparison to the SCLs are summarized in Table 5-2.

Because there are no existing air pollutant emission sources at the Weiser facility, the modeling analysis developed to assess the proposed project impacts is effectively a facility-wide analysis. Table 5-2 shows the predicted maximum ambient PM_{10} concentrations combined with DEQ-provided (see Appendix D) background values. As shown in Table 5-2, the total predicted concentration is less than the applicable NAAQS established for PM_{10}.

As discussed in Section 3, two TAPs (crystalline quartz and methyl n-amyl ketone) were required to demonstrate compliance with the AAC as a result of the maximum PTE emissions exceeding the screening ELs. As shown in Table 5-2, the predicted maximum ambient concentrations for both compounds are less than the applicable AACs.

5.4 CONCLUSIONS

Using a DEQ-approved methodology, ambient concentration increases attributable to the proposed project were predicted to not exceed any ambient increment or standard. Compliance with the screening ELs or AACs is considered demonstration that TAP emissions attributable to the proposed project would not injure or unreasonably affect human or animal life or vegetation.

TABLES

TABLE 3-1

PAINT BOOTH CRITERIA AND TOXIC AIR POLLUTANT EMISSION RATES

Mirage Industries Paint Booth Project
Weiser, Idaho

Compound	CAS No.	Emission Rate[1]		BRC[2] Level (TPY)	Over BRC Level?	Screening Emission Level[3] (lb/hr)	Over Screening Emission Level?
		(lb/hr)	(TPY)				
PM_{10}	--	0.45	0.83	1.5	No	N/A	N/A
VOC	--	11	20	4.0	Yes	N/A	N/A
Calcium Carbonate	471-34-1	0.081	0.15	N/A	N/A	N/A	N/A
Methyl n-Amyl Ketone	110-43-0	17	30	1.57	Yes	15.7	Yes
Methyl Proply Ketone	107-87-9	2.08	3.8	4.67	No	46.7	No
Mineral Spirits	8052-41-3	2.08	3.8	3.5	Yes	35	No
Petroleum HC Resin	64742-16-1	4.16	7.6	N/A	N/A	N/A	N/A
Quartz, Crystalline	14808-60-7	0.031	0.057	0.00067	Yes	0.0067	Yes

1 Emission rates calculated based on MSDS for Gavlon Black HAPS Free High Gloss Air Dry Enamel

2 BRC = Below Regulatory Concern (IDAPA 58.01.01.221.01)

3 Screening Emission Levels (EL) from IDAPA 58.01.01.585

TABLE 5-1

AIR QUALITY DISPERSION MODELING RELEASE PARAMETERS

Mirage Industries Paint Booth Project
Weiser, Idaho

Parameter	Value	Units
Stack Height	27	feet
Stack Diameter	0[1]	inches
Exit Velocity	0[1]	feet/second
Temperature	68	ºF
Structure Width	45[2]	feet
Structure Length	102[2]	feet
Structure Height	18	feet
Distance to Nearest Ambient Receptor	40	feet

1 The stack diameter and exit velocity were set to zero to eliminate plume rise imparted by the velocity of the exhaust leaving the stack.

2 The maximum overall horizontal dimensions of the building in which the paint booth is located were used for the downwash calculations to be conservative.

TABLE 5-2

AIR DISPERSION MODELING RESULTS

Mirage Industries Paint Booth Project
Weiser, Idaho

Concentrations in micrograms per cubic meter ($\mu g/m^3$)

Pollutant	CAS No.	Averaging Period	Maximum Predicted Concentration Increase	Significant Contribution Level or Acceptable Ambient Concentration[1]	Background Concentration[2]	Total Predicted Ambient Concentration[3]	National Ambient Air Quality Standard[4]
PM_{10}	N/A	24-Hour	65.6	5	73	139	150
		Annual	13.1	1	26	39.1	50
Methyl n-Amyl Ketone	110-43-0	24-Hour	2,410	11,750	--	--	--
Quartz, Crystalline	14808-60-7	24-Hour	4.52	5	--	--	--

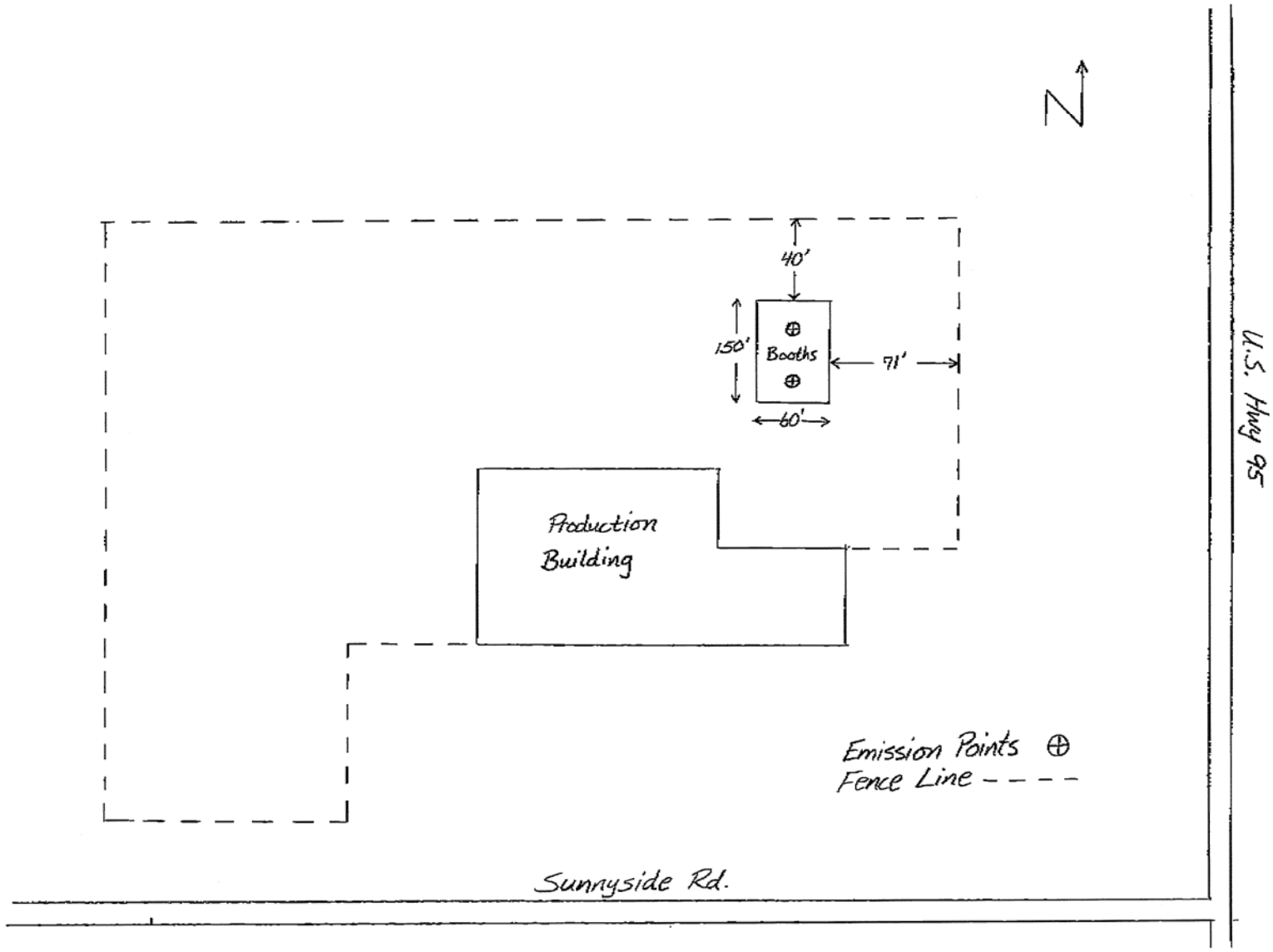
1 Significant Contribution Levels (SCLs) are from IDAPA 58.01.01.006.93, and the Acceptable Ambient Concentration (AAC) is from IDAPA 58.01.01.585.

2 Background concentration for rural agricultural areas from DEQ (see Appendix D)

3 Sum of the maximum predicted concentration and the background concentration.

4 National Ambient Air Quality Standards from IDAPA 58.01.01.577.

FIGURES



GEOMATRIX

MIRAGE ENTERPRISES NAMPA FACILITY PLOT PLAN SKETCH
Mirage Industries Paint Booth Project
Weiser, Idaho

Project No.
10277.002

Figure
2-1

APPENDIXES

APPENDIX A

DEQ PTC Application Forms

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: 208-373-0502

PERMIT TO CONSTRUCT APPLICATION

Applicants, please see instructions on page 2 before filling out the form.

DEQ Staff, please see instructions for handling this form on page 3.

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER			
1. Company Name	Mirage Enterprises, Inc.		
2. Facility Name	TNT Trailers	3. Facility ID No.	
4. Brief Project Description - One sentence or less	Install and operate a paint booth		

PERMIT APPLICATION TYPE

5. ☐ New Facility ☒ New Source at Existing Facility ☐ Unpermitted Existing Source
☐ Modify Existing Source: Permit No.:_____ Date Issued:_____
☐ Required by Enforcement Action: Case No.:_____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms	DEQ Verify
☒	☐	Form GI – Facility Information	☐
☐	☒	Form EU0 – Emissions Units General	☐
☐	☒	Form EU1 - Industrial Engine Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU2 - Nonmetallic Mineral Processing Plants Please Specify number of forms attached: _____	☐
☒	☐	Form EU3 - Spray Paint Booth Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU4 - Cooling Tower Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU5 – Boiler Information Please Specify number of forms attached: _____	☐
☐	☒	Form HMAP – Hot Mix Asphalt Plant Please Specify number of forms attached: _____	☐
☐	☒	Form CBP - Concrete Batch Plant Please Specify number of forms attached: _____	☐
☐	☒	Form BCE - Baghouses Control Equipment	☐
☐	☒	Form SCE - Scrubbers Control Equipment	☐
☒	☐	Forms EI-CP1-EI-CP4 - Emissions Inventory– criteria pollutants (Excel workbook, all 4 worksheets)	☐
☒	☐	PP – Plot Plan	☐
☒	☐	Forms MI1-MI4 – Modeling (Excel workbook, all 4 worksheets)	☐
☒	☐	Form FRA – Federal Regulation Applicability	☐

DEQ USE ONLY

Date Received

Project Number

Payment / Fees Included?
Yes ☐ No ☐

Check Number

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: (208) 373-0502

PERMIT TO CONSTRUCT APPLICATION

Please see Instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION			
1. Company Name	Mirage Enterprises, Inc.		
2. Facility Name (If different than #1)	TNT Trailers		
3. Facility I.D. No.			
4. Brief Project Description:	Install and operate a paint booth		
FACILITY INFORMATION			
5. Owned/operated by: (√ if applicable)	☐ Federal government ☐ County government ☐ State government ☐ City government		
6. Primary Facility Permit Contact Person/Title	Jason Starry		
7. Telephone Number and Email Address	208-461-7776, jason@mirageinc.com		
8. Alternate Facility Contact Person/Title	Trent White		
9. Telephone Number and Email Address	208-549-1000, trent@mirageinc.com		
10. Address to which permit should be sent	2212 Industrial Road		
11. City/State/Zip	Nampa, ID 83687		
12. Equipment Location Address (if different than #9)	1428 Sunnyside Road		
13. City/State/Zip	Weiser, ID 83672		
14. Is the Equipment Portable?	☐ Yes ☒ No		
15. SIC Code and NAISC Code	SIC: 3715	Secondary SIC (if any):	NAICS: 336212
16. Brief Business Description and Principal Product	Cargo Trailer Manufacturing		
17. Identify any adjacent or contiguous facility that this company owns and/or operates	None		
PERMIT APPLICATION TYPE			
18. Specify Reason for Application	☐ New Facility ☒ New Source at Existing Facility ☐ Modify Existing Source: Permit No.:____ Date Issued:____ ☐ Unpermitted Existing Source: ☐ Required by Enforcement Action: Case No.:		
CERTIFICATION			
IN ACCORDANCE WITH IDAPA 58.01.01.123 (RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO), I CERTIFY BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION IN THE DOCUMENT ARE TRUE, ACCURATE, AND COMPLETE.			
19. Responsible Official's Name/Title	Dale Swikert		
20. RESPONSIBLE OFFICIAL SIGNATURE		Date: 5/17/07	

PERMIT TO CONSTRUCT APPLICATION

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: (208) 373-0502

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

Company Name:	Facility Name:	Facility ID No:
Mirage Enterprises, Inc.	TNT Trailers	

Brief Project Description: Install and operate a paint booth

BOOTH INFORMATION

1. Booth Type: ☒ New Booth ☐ Unpermitted Existing Booth
☐ Modification to a Permitted Booth, permit #: , date issued:

2. Construction Date: Construction will begin upon receipt of permit.

SPRAY GUN DESCRIPTION AND SPECIFICATIONS

Gun No.	3. Manufacturer	4. Model	5. Type	6. Transfer Eff. %	7. Rated Capacity (gal/hr)
1	Graco	Contractor II	Airless	75-80	14.4
2					
3					
4					

Number of guns to be used simultaneously: 2

SPRAY MATERIAL DESCRIPTION AND SPECIFICATIONS

8. Type of Spray Material Used	9. Type of Material Coated	10. Max. Usage (gal/day)	11. Solid Content (lb/gal)	12. VOC Content (lb/gal)	13. MSDS Attached? (Y/N)
Gavlon 411-FC DTM Gloss Black	Cargo Trailers	40	7.5	2.8	Y (Appendix B of Permit Application)

REQUEST FOR PERMIT LIMITATIONS

14. Are you requesting any permit limits? ☒ No ☐ Yes. If yes, check all that apply below and fill in requested limit(s)

☐ Operation Hour Limits:	☐ Production Limits:
☐ Material Usage Limits:	☐ Other:

15. Rationale for Requesting the Limit(s):

EMISSION CONTROL DEVICE (FILTER[b]) DESCRIPTION AND SPECIFICATIONS

Stack Served	16. Filter Manufacturer	17. Model	18. PM Control Efficiency(%)[a]	19. Dimension (Total Area, Thickness and Number of Filters)
Stack 1	Paint Pockets Co.	Original	94-99.84	30 20"x20"x15" pocket filters
Stack 2	same as above	same as above	same as above	16 20"x20"x15" pocket filters
Stack 3				
Stack 4				

Notes: a. Provide either stack test data or vendor's documentation to support the control efficiency specified above.
b. Fill out and submit appropriate control equipment form(s) if this booth has a control device(s) other than a filter system.

BOOTH OPERATING SCHEDULE (hours/day, or hours/year, or other)

20. Actual Operation: 10 hours/day	21. Maximum Operation: 3,650 hours/year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: (208) 373-0502

PERMIT TO CONSTRUCT APPLICATION

Company Name:	Mirage Enterprises, Inc.
Facility Name:	TNT Trailers
Facility ID No.:	
Brief Project Description:	Install and operate a paint booth

SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - POINT SOURCES

		3.											
1.	2.	PM_{10}		SO_2		NO_X		CO		VOC		Lead	
Emissions units	Stack ID	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
Paint Booth	1.00	0.45	0.83							11.20	20.44		
name of the emissions unit2													
name of the emissions unit3													
name of the emissions unit4													
name of the emissions unit5													
name of the emissions unit6													
name of the emissions unit7													
name of the emissions unit8													
name of the emissions unit9													
name of the emissions unit10													
name of the emissions unit11													
name of the emissions unit12													
name of the emissions unit13													
name of the emissions unit14													
name of the emissions unit15													
name of the emissions unit16													
name of the emissions unit17													
name of the emissions unit18													
name of the emissions unit19													
name of the emissions unit20													
name of the emissions unit21													
(insert more rows as needed)													
Total		0.45	0.83							11.20	20.44		

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: (208) 373-0502

PERMIT TO CONSTRUCT APPLICATION

Company Name:	Mirage Enterprises, Inc.
Facility Name:	TNT Trailers
Facility ID No.:	
Brief Project Description:	Install and operate a paint booth

SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES

		3.											
1.	2.	PM_{10}		SO_2		NO_X		CO		VOC		Lead	
Emissions units	Stack ID	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
Paint Booth	1.00	0.45	0.83							11.20	20.44		
name of the emissions unit2													
name of the emissions unit3													
name of the emissions unit4													
name of the emissions unit5													
name of the emissions unit6													
name of the emissions unit7													
name of the emissions unit8													
name of the emissions unit9													
name of the emissions unit10													
name of the emissions unit11													
name of the emissions unit12													
name of the emissions unit13													
name of the emissions unit14													
name of the emissions unit15													
name of the emissions unit16													
name of the emissions unit17													
name of the emissions unit18													
name of the emissions unit19													
name of the emissions unit20													
name of the emissions unit21													
(insert more rows as needed)													
Total		0.45	0.83							11.20	20.44		

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton Boise, ID 83706 **For assistance: (208) 373-0502**	**PERMIT TO CONSTRUCT APPLICATION**
Company Name:	Mirage Enterprises, Inc.	
Facility Name:	TNT Trailers	
Facility ID No.:		
Brief Project Description:	Install and operate a paint booth	

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

		1.		2.	3.	4.		5.
Criteria Pollutants	**Averaging Period**	**Significant Impact Analysis Results (µg/m3)**	**Significant Contribution Level (µg/m3)**	**Full Impact Analysis Results (µg/m3)**	**Background Concentration (µg/m3)**	**Total Ambient Impact (µg/m3)**	**NAAQS (µg/m3)**	**Percent of NAAQS**
PM_{10}	24-hour	65.58	5	65.58	73.00	138.58	150	92%
	Annual	13.12	1	13.12	26.00	39.12	50	78%
SO_2	3-hr		25				1300	
	24-hr		5				365	
	Annual		1				80	
NO_2	Annual		1				100	
CO	1-hr		2000				10000	
	8-hr		500				40000	

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton Boise, ID 83706 **For assistance: (208) 373-0502**	**PERMIT TO CONSTRUCT APPLICATION**
Company Name:	Mirage Enterprises, Inc.	
Facility Name:	TNT Trailers	
Facility ID No.:		
Brief Project Description:	Install and operate a paint booth	

POINT SOURCE STACK PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	.7	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Stack Height (m)**	**Modeled Diameter (m)**	**Stack Exit Temperature (K)**	**Stack Exit Flowrate (acfm)**	**Stack Exit Velocity (m/s)**	**Stack orientation (e.g., horizontal, rain cap)**
Point Source(s)										
Paint Booth	1.00	screen	screen	screen	8.23	0 - horiz.	293.00	23,000.00	0 - horiz.	Horizontal
name of the emissions unit2										
name of the emissions unit3										
name of the emissions unit4										
name of the emissions unit5										
name of the emissions unit6										
name of the emissions unit7										
name of the emissions unit8										
name of the emissions unit9										
name of the emissions unit10										
name of the emissions unit11										
name of the emissions unit12										
name of the emissions unit13										
name of the emissions unit14										
name of the emissions unit15										
name of the emissions unit16										
name of the emissions unit17										
name of the emissions unit18										
name of the emissions unit19										
name of the emissions unit20										
name of the emissions unit21										
(insert more rows as needed)										

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton Boise, ID 83706 **For assistance: (208) 373-0502**	**PERMIT TO CONSTRUCT APPLICATION**

Company Name:	Mirage Enterprises, Inc.
Facility Name:	TNT Trailers
Facility ID No.:	
Brief Project Description:	Install and operate a paint booth

BUILDING AND STRUCTURE INFORMATION

1.	2.	3.	4.	5.	6.	7.
Building ID Number	**Length (ft)**	**Width (ft)**	**Base Elevation (m)**	**Building Height (m)**	**Number of Tiers**	**Description/Comments**
Building 1 ID	102.00	45.00	screen	5.49	1	
Building 2 ID						
Building # ID						
(insert more rows as needed)						

DEQ AIR QUALITY PROGRAM
1410 N. Hilton
Boise, ID 83706
For assistance: (208) 373-0502

PERMIT TO CONSTRUCT APPLICATION

IDENTIFICATION		
Company Name:	Facility Name:	Facility ID No:
Mirage Enterprises, Inc.	TNT Trailers	
Brief Project Description:	Install and operate a paint booth	

APPLICABILITY DETERMINATION			
1. Will this project be subject to 1990 CAA Section 112(g)? (Case-by-Case MACT)	☒ NO	☐ YES*	☐ DON'T KNOW
	* If YES then applicant must submit an application for a case-by-case MACT determination [IAC 567 22-1(3)"b" (8)]		
2. Will this project be subject to a New Source Performance Standard? (40 CFR part 60)	☒ NO	☐ YES*	☐ DON'T KNOW
	*If YES please identify sub-part: _____		
3. Will this project be subject to a MACT (Maximum Achievable Control Technology) regulation? (40 CFR part 63) THIS ONLY APPLIES IF THE PROJECT EMITS A HAZARDOUS AIR POLLUTANT – SEE TABLE A FOR LIST	☒ NO	☐ YES*	☐ DON'T KNOW
	*If YES please identify sub-part: _____		
4. Will this project be subject to a NESHAP (National Emission Standards for Hazardous Air Pollutants) regulation? (40 CFR part 61)	☒ NO	☐ YES*	☐ DON'T KNOW
	*If YES please identify sub-part: _____		
5. Will this project be subject to PSD (Prevention of Significant Deterioration)? (40 CFR section 52.21)	☒ NO	☐ YES	☐ DON'T KNOW
6. Was netting done for this project to avoid PSD?	☒ NO	☐ YES*	☐ DON'T KNOW
	*If YES please attach netting calculations		

IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS CALL 1-208-373-0502

APPENDIX B

MSDS for Proposed Paint

Material Safety Data Sheet

1. Identification of the substance/preparation and of the company/undertaking

Product Name: Black HAPS Free High Goss Air Dry Enamel

Product Code: 411-FC

Supplier: Bradley Coatings Group, 608 W Crawford Avenue, Connellsville, PA 15425

For Emergency Health, Safety & Environmental Information, call CHEMTREC: 1-800-424-9300.

For other information or to request an MSDS, call 724-628-9100.

Product Use: Paint for industrial use.

2. Hazards Identification

Contains: Methyl N-amyl Ketone (110-43-0), Methyl Propyl Ketone (107-87-9), Mineral Spirits (8052-41-3), Quartz (14808-60-7)

WARNING!
Combustible Liquid and vapor
Harmful if inhaled or swallowed
Causes eye, skin, and respiratory tract irritation
Can cause central and peripheral nervous system affects
Contains a component that may cause cancer in humans

NFPA Hazard Ratings: Health – 2, Flammability – 2, Instability – 0

Note: NFPA 704 hazard indexes involve data review and interpretation that may vary among companies. It is intended only for rapid, general identification of the magnitude of the potential hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight %	Components (CAS No.)
15 – 40	Methyl N-Amyl Ketone (110-43-0)
7 – 13	Calcium Carbonate (471-34-1)
5 – 10	Petroleum Hydrocarbon Resin (64742-16-1)
1 – 5	Methyl Propyl Ketone (107-87-9)
1 – 5	Mineral Spirits (8052-41-3)
1 – 5	Quartz (14808-60-7)

Additional Information

This product is considered to be hazardous under 29 CFR 1910.1200 (Hazard Communication).
This material is a controlled product under WHMIS regulations.
This material is regulated as a hazardous material/dangerous goods for transportation (See Section 14).

4. First Aid Measures

Inhalation: Remove source of contamination or move victim to fresh air. Obtain medical advice.

Eyes: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes, while holding the eyelid(s) open. Obtain medical advice.

Skin: Remove contaminated clothing, shoes, and leather goods. Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with lukewarm gently flowing water and non-abrasive soap for 5 minutes. If irritation persists, repeat flushing. Obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Ingestion: NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. If vomiting occurs naturally, have victim rinse mouth with water again. Obtain medical advice.

5. Fire-fighting Measures

Extinguishing Media: Use foam, carbon dioxide, or dry chemical.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Use water to cool unopened containers.

Hazardous Combustion Products: Carbon oxides, sulfur oxides, nitrogen oxides, calcium oxide, and low molecular weight hydrocarbons.

Unusual Fire and Explosion Hazards: Combustible liquid and vapor. Vapors may form an explosive mixture in air between the upper and lower explosive limits. Vapors are heavier than air and may spread along floors. Vapors can travel to a source of ignition and flash back.

6. Accidental Release Measures

Methods for cleaning up: Remove all sources of ignition. Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination. Keep product out of sewers and water ways.

7. Handling and Storage

Personal Precautions: Do not breathe vapors at concentrations greater than the exposure limits. Use only with adequate ventilation. Keep container tightly closed. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from open flames, hot surfaces and sources of ignition. Use only with adequate ventilation. Keep from contact with oxidizing materials. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of combustible liquids.

Storage: Store in a cool place. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatible substances (see Incompatibility section.)

Material Safety Data Sheet

8. Exposure Controls/Personal Protection

Occupational Exposure Controls

Chemical Name	Regulatory List	Value Type	Value
Methyl N-Amyl Ketone	ACGIH	Threshold Limit Value	50 ppm
	OSHA	Permissible Exposure Limit	100 ppm
Calcium Carbonate	ACGIH	Threshold Limit Value	10 mg/m^3 TWA (for dust containing no asbestos and <1% free silica)
	OSHA	Permissible Exposure Limit	15 mg/m^3 TWA (Total Dust) 5 mg/m^3 TWA (Respirable Fraction)
Methyl Propyl Ketone	ACGIH	Threshold Limit Value	200 ppm TWA 250 ppm STEL
	OSHA	Permissible Exposure Limit	200 ppm TWA
Mineral Spirits	ACGIH	Threshold Limit Value	100 ppm TWA
	OSHA	Permissible Exposure Limit	500 ppm TWA
Quartz	ACGIH	Threshold Limit Value	0.1 mg/m^3 (Respirable Fraction)
	OSHA	Permissible Exposure Limit	30 mg/m^3/ (%SiO2+2) (Total Dust) 10 mg/m^3/ (%SiO2+2) (Respirable Fraction)

Ventilation: Use process enclosures, local exhaust, ventilation, or other engineering controls to maintain airborne exposure levels below recommended exposure limits. Controls should be sufficient so that applicable occupational exposure limits are not exceeded.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

Eye Protection: Wear safety glasses with side shields (or goggles).

Skin and Body Protection: Wear impervious gloves and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to conditions of use.

Material Safety Data Sheet

9. Physical and Chemical Properties

Physical Form: Liquid

Color: Black

Odor: Solvent

Specific Gravity @ 15°C: 1.22

Vapor Pressure: No data available

Vapor Density: Heavier than air

Boiling Point/Range: >214°F

Water Solubility: Immiscible

pH: No data available

Viscosity @ 25°C: 25-30 seconds, #3 Zahn

Volatile % by weight: 27.5%

Volatile % by volume: ~57%

Flashpoint: ~110°F

LFL: No data available **UFL:** No data available

Flammability Class: Combustible Liquid, Class II

10. Stability and Reactivity

Stability: Stable under normal circumstances.

Incompatibility: Avoid contact with strong acids, alkalis, strong oxidizing agents, strong bases, ammonium salts, fluorine containing compounds, amines, isocyanates, manganese trioxide, hydrogen peroxide, acetylene, and ammonia.

Hazardous Decomposition Products: Carbon oxides, sulfur oxides, nitrogen oxides, calcium oxide, and low molecular weight hydrocarbons.

Hazardous Polymerization: Hazardous polymerization does not occur.

11. Toxicological Information

Effects of Exposure

Inhalation: Harmful if inhaled. Excessive or deliberate inhalation of vapors can cause respiratory tract irritation, dizziness, and/or asphyxiation.

Eyes: Can cause eye irritation. Symptoms may include tearing, redness, and blurred vision.

Skin: Can cause skin irritation. Prolonged or repeated skin contact may dry and defat the skin causing cracks, irritation, and/or dermatitis. May cause allergic skin reaction.

Ingestion: Harmful if swallowed. Can cause gastrointestinal irritation, vomiting, nausea, and diarrhea.

Data for Methyl N-Amyl Ketone

Acute Toxicity Data:

- Oral LD50 (rat): 1670 mg/kg
- Dermal LD50 (rabbit): 12,600 uL/kg

Data for Methyl Propyl Ketone

Acute Toxicity Data:

- Oral LD50 (rat): 1600 mg/kg
- Dermal LD50 (rabbit): 6500 mg/kg

12. Ecological Information

This product has not been tested for environmental effects.

13. Disposal Considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since empty containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

14. Transport Information

TDG:	UN Number:	UN1263
	Proper Shipping Name:	Paint
	Class:	3
	Packaging Group:	III
US DOT:	UN Number:	UN1263
	Proper Shipping Name:	Paint
	Class:	3
	Packaging Group:	III

15. Regulatory Information

WHMIS (Canada): B3, D2A, D2B

WHMIS Symbol(s):

Component Analysis – International Inventory Status:

Components (CAS No.)	US – TSCA	CANADA - DSL
Methyl N-Amyl Ketone (110-43-0)	Yes	Yes
Calcium Carbonate (471-34-1)	Yes	Yes
Petroleum Hydrocarbon Resin (64742-16-1)	Yes	Yes
Methyl Propyl Ketone (107-87-9)	Yes	Yes
Mineral Spirits (8052-41-3)	Yes	Yes
Quartz (14808-60-7)	Yes	Yes

Component Analysis – Right to Know:

The following chemicals are specifically listed or otherwise regulated by individual states. For details on your regulatory requirements you should contact the appropriate agency in your state.

Components (CAS No.)	NJ	PA	CA
Methyl N-Amyl Ketone (110-43-0)	Yes	Yes	Yes
Calcium Carbonate (471-34-1)		Yes	
Methyl Propyl Ketone (107-87-9)	Yes	Yes	
Mineral Spirits (8052-41-3)	Yes	Yes	Yes
Quartz (14808-60-7)	Yes	Yes	Yes

U.S. California Prop. 65: Quartz (14808-60-7),

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): Quartz (14808-60-7)-Group 1-carcinogen

American Conference of Governmental Industrial Hygienists (ACGIH): Quartz (14808-60-7)-A2-Suspected human carcinogen

U.S. National Toxicology Program (NTP): Quartz (14808-60-7)-Known carcinogen (listed as Silica, crystalline (general form)).

U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372:
None

16. Other Information

MSDS Creation Date: October 23, 2003 **Revision Date:** April 10, 2007

Material Safety Data Sheet

Material Safety Data Sheets (MSDS) are available free of charge for every product Bradley Coatings Group manufactures. Before using any paint product manufactured by Bradley Coatings Group we strongly recommend that you read and follow the precautions listed in the MSDS.

This supersedes all previous publications. Always consult your Bradley Coatings Group representative for the latest product information and recommendations.

The information presented herein has been compiled from sources considered to be dependable and I accurate to the best of seller's knowledge. However, seller makes no warranty whatsoever, expressed, implied or of merchantability regarding the accuracy of such data or the results to be obtained from the use of thereof. Seller assumes no responsibility for injury to buyer or third party or any damage to property. Buyer assumes all such risks.

BRADLEY
COATINGS GROUP

PRODUCT DATA SHEET

411 FC Haps Free
High Solids DTM Enamel

Description

High solids, single package, HAPS Free, direct to metal finish for OEM and refinish applications.

Recommended Uses

This product is an excellent choice for a tough, long lasting enamel used to protect and enhance OEM machinery and equipment. It is also used with great success on commercial trailers.

Features

- Low VOC: 2.8 lbs./gallon (336 grams/liter)
- High gloss and D.O.I.
- Ease of application: Low viscosity permits application with conventional or transfer efficient spray equipment.
- Excellent adhesion: One coat direct to metal can be applied over a wide range of primers and previously painted surfaces.
- Durable: Very good weather ability.
- Economical: A high solids, low VOC finish .
- Minimum 1200 Hours Salt Spray (ASTM B-117)

Typical Properties

% Weight Solids	72.5% (+/- 3.0)
% Volume Solids	57.0% (+/- 3.0)
Weight per Gallon	10.4 Lbs./Gallon (+/- 0.2)
VOC (Volatile Organic Compounds)	2.8 Lbs./Gallon (336.0 Grams/Liter)
Viscosity @ 77° F	25 Seconds #3 Zahn Cup (+/- 3.0)
Gloss Level 60° Meter	>90
Flash Point	110° F (C.O.C.)
Theoretical Coverage @ 1 Dry Mil - .001"	914.0 Sq. Ft./Gallon
Recommended Film Thickness - Wet Mils	2.0 – 5.0
Recommended Film Thickness - Dry Mils	1.5 – 3.0
SSPC Minimum Surface Preparation	SP6 (NACE 3)
Surface Temp at Application - Minimum	45° F
Surface Temp at Application - Maximum	110° F
Drying Time @ 77° F - to Touch (Air Dry)	15 - 20 Minutes
Drying Time @ 77° F - to Handle (Air Dry)	2 – 4 Hours
Drying Time @ 77° F - to Recoat (Air Dry)	24 - 36 Hours
Reduction Solvent	Contact Bradley Coatings Group
Primer (If Specified)	N/A

BRADLEY COATINGS GROUP • 2873 W. Hardies Rd. • Gibsonia, PA 15044 • PHONE (724) 444-4400 • FAX (724) 444-5790
www.bradleycoatings.com • info@bradleycoatings.com

BRADLEY COATINGS GROUP

PRODUCT DATA SHEET

411 FC Haps Free
High Solids DTM Enamel

Application Conditions

Brush, roller or spray may apply 411 FC. Apply in good weather. Paint only over clean, dry surfaces. Application not recommended below 45° F. Care should be taken to completely re-disperse all of the pigments that may have settled top the bottom of the container. Power mix for 3-5 minutes or until completely dispersed. Contact Bradley Coatings Group for specific application recommendations.

Surface Preparation

Remove oil, grease, dirt, salts and loose materials by solvent cleaning as specified by the SSPC-SP1 or other suitable cleaning method. Remove all rust, rust scale, loose mill scale, and other corrosion products by hand or power tool cleaning or a commercial blast SSPC-SP6 (NACE 3). In highly corrosive environments, when maximum service life is desirable, use an SSPC-SP10 (NACE) near white blast.

Application & Equipment

SAFETY INFORMATION

WARNING. Flammable. Vapor Harmful. Contains organic solvents. Keep away from heat, sparks, and open flame. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor. Wash thoroughly after handling. Use only with adequate ventilation. Use suitable respiratory equipment as necessary. Keep container closed.

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Call a physician. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse.

Material Safety Data Sheets (MSDS) are available free of charge for every product Bradley Coatings Group manufactures. Before using any paint product manufactured by Bradley Coatings Group we strongly recommend that you read and follow the precautions listed in the MSDS.

This supersedes all previous publications. Always consult your Bradley Coatings Group representative for the latest product information and recommendations.

This information is presented as accurate and correct in good faith to assist the user with specifications and application. No warranty is expressed or implied. No liability is assumed. All product specifications are subject to change without notice.

Health	2
Flammability	2
Reactivity	0
Personal Protection	See Your Supervisor

July 2003

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www.bradleycoatings.com • info@bradleycoatings.com

APPENDIX C

Paint Booth Emission Rate Calculations

Paint Booth PM_{10}, VOC, and TAP Proposed Emissions
Mirage Enterprises Inc. - TNT Trailers Facility

May 2007

Pollutant	CAS	% by Weight	Paint Emission Rate (lb/hr)	SER or Regulatory Action Levels (TPY or lb/hr)	Regulatory Concern Level (TPY or lb/hr)	PTE (TPY)
PM_{10}			0.452	15	1.50	0.83
VOC			11.2	40	4	20
Calcium Carbonate	471-34-1	13	0.0811			0.15
Petroleum HC Resin	64742-16-1	10	4.16			7.6
Methyl n-Amyl Ketone	110-43-0	40	16.6	15.7	1.57	30
Methyl Propyl Ketone	107-87-9	5	2.08	46.7	4.67	3.8
Mineral Spirits	8052-41-3	5	2.08	35	3.5	3.8
Quartz	14808-60-7	5	0.0312	0.0067	0.00067	0.057

Notes

1) Based on MSDS information for Gavlon Black HAPS Free High Gloss Air Dry Enamel (Prod. # 411-FC)
2) Maximum hourly paint application rate = 4.00 gal/hr
3) Equivalent weekly paint consumption = 280 gal/wk assuming
   the painting schedule is: 10 hours/day 7 days/week
   (PTE Assumes painting 24 hours per day 365 days per year for maximum operational flexibility).
4) Density of paint is 10.4 lb/gal
5) Spray transfer efficiency = 75 %
6) Paint booth filter efficiency = 94 %
7) Maximum solids content = 72.5 % by wt.
8) VOC content = 2.8 lbs/gallon

APPENDIX D

Modeling Protocol Approval Letter

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 NORTH HILTON, BOISE, ID 83706 · (208) 373-0502

C. L. "BUTCH" OTTER, GOVERNOR
TONI HARDESTY, DIRECTOR

May 14, 2007

Eric Albright
Geomatrix Consultants, Inc.
19203 36th Avenue West, Suite 101
Lynnwood, WA 98036-5772

RE: Modeling Protocol for Mirage Enterprises, Inc. located in Weiser, Idaho

Mr. Albright:

DEQ received your dispersion modeling protocol on May 11, 2007. The modeling protocol was submitted on behalf of Mirage Enterprises, Inc. (Mirage), which owns and operates a trailer manufacturing facility. The modeling protocol proposes methods and data for use in the ambient impact analyses for a modification to Mirage's facility in Weiser for the installation of two paint spray booths. Hourly and annual emissions are expected to increase, but the emissions inventory has not been finalized according to the modeling protocol.

The modeling protocol has been reviewed and DEQ has the following comments:

- Comment 1: In the event that maximum predicted impacts from your preliminary analysis exceed the PM_{10} significant contribution levels specified by IDAPA 58.01.01.006.102.d, use the following PM_{10} background concentrations in your facility-wide full impact analysis: 73 micrograms per cubic meter ($\mu g/m^3$), 24-hr avg, and 26 $\mu g/m^3$, annual avg. These background concentrations are for rural agricultural areas and are based on Mirage's facility location south of the town of Weiser, in a small industrial park that is completely surrounded by agricultural land.

- Comment 2: The application should provide documentation and justification for stack parameters used in the modeling analyses, clearly showing how stack gas temperatures and flow rates were estimated. In most instances, applicants should use typical parameters, not maximum temperatures and flow rates.

- Comment 3: Submit a scaled facility plot plan with all building, structures and the locations of the exhaust stacks clearly shown and labeled. Include all nearby structures that may influence ambient impacts due to building downwash, regardless of whether they are on Mirage's property. Include all building and structure heights.

- Comment 4: Include a justification of your ambient air boundary per the *State of Idaho Air Quality Modeling Guideline* in the permit application. Ambient air at hospitals is generally considered to exist anywhere the public is allowed access. Ambient air in this case is usually established immediately exterior to buildings on the facility property. Please include a detailed justification if you would like to establish a fence line ambient air boundary.

- Comment 5: Deviations in your analysis from the proposed approved methodology may affect DEQ-approval of the modeling demonstration unless such deviations are deemed to be warranted. Please provide a detailed discussion of any deviations and supporting justification of the approach used in the final analysis.

- Comment 6: Please include all calculations used to derive values used in the building downwash analysis (such as projected building widths), including those used to determine whether any nearby buildings and structures are within the structure influence zone.

DEQ's modeling staff considers the submitted dispersion modeling protocol, with resolution of the additional items noted above, to be approved. It should be noted, however, that the approval of this modeling protocol is not meant to imply approval of a completed dispersion modeling analysis. Please refer to the *State of Idaho Air Quality Modeling Guideline*, which is available on the Internet at http://www.deq.state.id.us/air/permits_forms/permitting/modeling_guideline.pdf, for further guidance.

If you have any further questions or comments, please contact me at (208) 373-0536.

Sincerely,

Darrin Mehr

Darrin Mehr
Air Quality Analyst
Idaho Department of Environmental Quality
Darrin.Mehr@deq.idaho.gov

APPENDIX E

SCREEN3 Model Output

05/15/07
11:04:18

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Weiser Paint Booth with cap

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	8.2296
STK INSIDE DIAM (M)	=	.0000
STK EXIT VELOCITY (M/S)	=	.0000
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	5.4900
MIN HORIZ BLDG DIM (M)	=	13.7000
MAX HORIZ BLDG DIM (M)	=	31.1000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .000 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
12.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	4763.	6	1.0	1.0	10000.0	8.23	4.07	5.62	SS
200.	2955.	6	1.0	1.0	10000.0	8.23	7.73	7.04	SS
300.	2088.	6	1.0	1.0	10000.0	8.23	11.23	8.39	SS
400.	1565.	6	1.0	1.0	10000.0	8.23	14.64	9.68	SS
500.	1221.	6	1.0	1.0	10000.0	8.23	17.97	10.93	SS
600.	1004.	6	1.0	1.0	10000.0	8.23	21.24	11.61	SS
700.	833.3	6	1.0	1.0	10000.0	8.23	24.46	12.63	SS
800.	704.8	6	1.0	1.0	10000.0	8.23	27.63	13.62	SS
900.	613.1	6	1.0	1.0	10000.0	8.23	30.78	14.29	SS
1000.	535.0	6	1.0	1.0	10000.0	8.23	33.88	15.15	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 12. M:

55.	6903.	6	1.0	1.0	10000.0	8.23	2.37	4.96	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)
****

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	.0000	CONC (UG/M**3)	=	.0000
CRIT WS @10M (M/S)	=	99.99	CRIT WS @10M (M/S)	=	99.99
CRIT WS @ HS (M/S)	=	99.99	CRIT WS @ HS (M/S)	=	99.99
DILUTION WS (M/S)	=	99.99	DILUTION WS (M/S)	=	99.99
CAVITY HT (M)	=	5.83	CAVITY HT (M)	=	5.49
CAVITY LENGTH (M)	=	22.52	CAVITY LENGTH (M)	=	14.76
ALONGWIND DIM (M)	=	13.70	ALONGWIND DIM (M)	=	31.10

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

****
END OF CAVITY CALCULATIONS
****

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	6903.	55.	0.

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** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
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